

Appl. No.: 10/563,233

Amdt. Dated April 17, 2009

Response to Office Action Mailed January 22, 2009

**REMARKS:**

Applicant appreciates the time and care the examiner has taken in examining the application.

In the Amendments. In the amendments presented above, claim 1 has been amended to add the limitation as it enters the housing of the kiln system (20) at the end of the claim. Support for this amendment is found in the original specification at, among other places, paragraph [0048]; original claim 37 in the national phase; and original claim 40 and amended claim 37 in the international phase. No new matter is presented.

Claim 23 has been found allowable if rewritten in independent form containing all of the limitations of the base claim and intervening claims. Accordingly, in the amendment above, claim 23 has been rewritten as an independent claim. The only change made in this rewriting was to add the descriptor "for mixing" to the term "system" to better distinguish the invention, namely the system for mixing, from the gas supply systems that the system for mixing comprises.

It is thus submitted that claims 23-26 should now be allowed, the objection having been addressed by the amendment presented above.

All the remaining claims are presented again, without amendment.

**On the Rejections.** All contents of the prior Response to Office Action are herein incorporated by reference. Applicant further states that the claim limitation "... wherein said injector (84,86) is provided with swirling means for providing axial swirl to said injected gas..." clearly defined that the stream of the injected gas itself is caused to rotate about its axis of injection, because, according to this wording, the axial swirl is provided to the injected gas, and not to the jet consisting of the process gases and the injected gases. But to even further define this point in view of the examiner's comments in the final Office action, the above amendment to claim 1 is presented in order to add the wording "as it enters the housing of the kiln system (20)." to the clause, so that the clause now provides as follows:

***"...wherein said injector (84,86) is provided with swirling means for providing axial swirl to said injected gas as it enters the housing of the kiln system (20)."***

When considering the amended wording of this claim, it is clear that when axial swirl is provided to the injected gas as it enters the housing of the kiln, the jet of injected gas is caused to rotate about its own axis of injection. This feature is hence even more clearly incorporated as an explicit limitation of the claims than in the prior version of claim 1.

Accordingly, it is respectfully submitted that the cited references, Hansen and JP 5223228, taken separately or in combination, fail to anticipate or render obvious the invention as claimed. Contrary to the examiner's findings, the nozzles shown in FIGS. 8a and 8b of U.S. Pat. No. 6,672,865 are not able to impart rotational momentum (swirling) to the jets of injected air. The shown nozzles are merely slots, causing, at best, a turbulent exit of the injected gases; it cannot be seen how these slots could impart a rotational movement to the jets. It is clear that the nozzles of Hansen are not injectors provided with swirling means for providing axial swirl to the injected gas as it enters the housing of the kiln system.

The feature of swirling means being provided to the injectors cannot be taken from JP 5223228 either, in which document there is also shown only an overall rotational movement of

the process gas flow about the longitudinal axis of a kiln. This reference fails to disclose or suggest injectors provided with swirling means for providing axial swirl to the injected gas as it enters the housing of the kiln system.

It is hence clear that the independent claims of the present application define the invention as novel and non-obvious over the cited art. Considering the advantages of imparting rotational movement to the jets of injected gas themselves as they enter the housing with the swirling means provided to the injectors, as was explained in the prior Response, it is clear that the subject matter of the present application is neither anticipated by nor rendered obvious by the cited references.

Therefore, it is respectfully submitted that all the rejections should now be reconsidered and withdrawn.

Conclusion. It is thus respectfully submitted that this application is in condition for prompt allowance; and that all of the objections, rejections and requirements raised in the Office action have been met.

Early, favorable treatment of this application is requested.

The examiner is encouraged to telephone the undersigned with any questions or comments so that efforts may be made to resolve any remaining issues.

**Extension Request and Deposit Account Charge Authorization.** The Commissioner is hereby authorized to charge any required fees, or credit any overpayment, associated with this communication, including fees for any necessary extension of time under 37 CFR §1.136(a) for filing this communication, which extension is hereby requested, to our Deposit Account No. 50-0305 of Chapman and Cutler LLP.

Respectfully submitted,

By:

  
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**CERTIFICATE OF FACSIMILE TRANSMISSION UNDER 37 C.F.R. § 1.8**

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I hereby certify that the attached correspondence, namely: Response to Final Office Action, was transmitted by facsimile on the date listed above, to the U.S. Patent Office at the facsimile number listed above, under 37 C.F.R. § 1.8.

Signature: 

Typed Name of Person Signing this Certificate: Robert J. Schneider

Date of Signature: April 17, 2009